Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Previously Presented) An isolated polynucleotide comprising a member selected from the group consisting of:

(a) a polynucleotide encoding a polypeptide having the deduced amino acid sequence of SEQ ID NO:4 or a fragment of said polypeptide;

(b) a polynucleotide encoding a polypeptide having the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. 75649;

(c) a polynucleotide encoding a polypeptide having the deduced amino acid sequence of SEQ ID NO:4 or a fragment of said polypeptide;

(d) a polynucleotide encoding a polypeptide having the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. 75651;

(e) a polynucleotide encoding a polypeptide having the deduced amino acid sequence of SEQ ID NO:6 or a fragment of said polypeptide; and

(f) a polynucleotide encoding a polypeptide having the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. 75650.

2. (Original) The polynucleotide of Claim 1 wherein the polynucleotide is DNA.

3. (Previously Presented) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide having the deduced amino acid sequence of SEQ ID NO:4.

4. (Original) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide having the deduced amino acid sequence of SEQ ID NO:4.

5. (Original) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide having the deduced amino acid sequence of SEQ ID NO:6.

6. (Original) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide encoded by the cDNA of ATCC Deposit No. 75649.

7. (Original) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide encoded by the cDNA of ATCC Deposit No. 75651.

8. (Original) The polynucleotide of Claim 1 wherein said polynucleotide encodes a polypeptide encoded by the cDNA of ATCC Deposit No. 75650.

9. (Original) A vector containing the polynucleotide of Claim 1.

10. (Original) A host cell genetically engineered with the vector of Claim 9.

11. (Original) A process for producing a polypeptide comprising expressing from the host cell of Claim 10 the polypeptide encoded by said DNA.

12. (Original) A process for producing cells capable of expressing a polypeptide comprising genetically engineering cells with the vector of Claim 9.

13. (Previously Presented) A polypeptide comprising a member selected from the group consisting of:

(a) a polypeptide having the deduced amino acid sequence of SEQ ID NO:4 and fragments thereof;

(b) a polypeptide encoded by the cDNA of ATCC Deposit No. 75649 and fragments of said polypeptide;

(c) a polypeptide having the deduced amino acid sequence of SEQ ID NO:4 and fragments thereof;

(d) a polypeptide encoded by the cDNA of ATCC Deposit No. 75651 and fragments of said polypeptide;

(e) a polypeptide having the deduced amino acid sequence of SEQ ID NO:6 and fragments thereof; and

(f) a polypeptide encoded by the cDNA of ATCC Deposit No. 75650 and fragments of said polypeptide.

14. (Cancelled)

15. (Previously Presented) The polynucleotide sequence of claim 1 for use in analyzing a sample for mutation of a polynucleotide sequence encoding a human mismatch repair protein comprising:

a polynucleotide sequence of at least 15 and no more than 30 consecutive bases of the polynucleotide sequence of ATCC Deposit No. 75649.

16. (Previously Presented) The polynucleotide sequence of claim 1 for use in analyzing a sample for mutation of a polynucleotide sequence encoding a human mismatch repair protein comprising:

a polynucleotide sequence of at least 15 and no more than 30 consecutive bases of the polynucleotide sequence of ATCC Deposit No. 75651.

17. (Previously Presented) The polynucleotide sequence of claim 1 for use in analyzing a sample for mutation of a polynucleotide sequence encoding a human mismatch repair protein comprising:

a polynucleotide sequence of at least 15 and no more than 30 consecutive bases of the polynucleotide sequence of ATCC Deposit No. 75650.

18. (Previously Presented) A process for diagnosing a susceptibility to cancer comprising:

assaying a sample derived from a human to determine a mutation in a human mismatch repair gene, said human mismatch repair gene comprising the polynucleotide sequence of claim 6.

19. (Previously Presented) A process for diagnosing a susceptibility to cancer comprising:

determining from a sample derived from a human patient a mutation in a human mismatch repair gene, said human mismatch repair gene comprising the DNA of claim 7.

20. (Previously Presented) A process for diagnosing a susceptibility to cancer comprising:

determining from a sample derived from a human patient a mutation in a human mismatch repair gene, said human mismatch repair gene comprising the DNA of claim 8.

21. (Previously Presented) A process for diagnosing a susceptibility to cancer comprising:

determining from a sample derived from a human patient a mutation in the polynucleotide of claim 1.

22. (Previously Presented) An isolated antibody or fragment thereof that specifically binds to a protein selected from the group consisting of:

(a) a protein consisting of amino acid residues 1 to 932 of SEQ ID NO:4;

(b) a protein consisting of a portion of SEQ ID NO:4, wherein said portion comprises at least 30 contiguous amino acid residues of SEQ ID NO:4; and

(c) a protein consisting of a portion of SEQ ID NO:4, wherein said portion comprises at least 50 contiguous amino acid residues of SEQ ID NO:4.

23. (Previously Presented) The antibody or fragment thereof of claim 22 that specifically binds protein (a).

24. (Previously Presented) The antibody or fragment thereof of claim 22 that specifically binds protein (b).

25. (Previously Presented) The antibody or fragment thereof of claim 22 that specifically binds protein (c).

26. (Previously Presented) The antibody or fragment thereof of claim 23 that specifically binds protein (b).

27. (Previously Presented) The antibody or fragment thereof of claim 23 wherein said protein bound by said antibody or fragment thereof is glycosylated.

28. (Previously Presented) The antibody or fragment thereof of claim 23 which is a human antibody.

29. (Previously Presented) The antibody or fragment thereof of claim 23 which is a polyclonal antibody.

30. (Previously Presented) The antibody or fragment thereof of claim 23 which is selected from the group consisting of:

(a) a chimeric antibody;

(b) a humanized antibody;

(c) a single chain antibody; and

(d) a Fab fragment.

31. (Previously Presented) The antibody or fragment thereof of claim 23 which is labeled.

32. (Previously Presented) The antibody or fragment thereof of claim 23 wherein said antibody or fragment thereof specifically binds to said protein in a Western Blot.

33. (Previously Presented) An isolated cell that produces the antibody or fragment thereof of claim 23.

34. (Previously Presented) A hybridoma that produces the antibody or fragment thereof of claim 23.

35. (Previously Presented) A method of detecting hMLH2 protein in a biological sample comprising:

(a) contacting the biological sample with the antibody or fragment thereof of claim 23; and

(b) detecting the hMLH2 protein in the biological sample.

36. (Previously Presented) The method of claim 35 wherein the antibody or fragment thereof is a polyclonal antibody.

37. (Previously Presented) An isolated antibody or fragment thereof obtained from an animal that has been immunized with a protein selected from the group consisting of:

(a) a protein comprising the amino acid sequence of amino acid residues 1 to 932 of SEQ ID NO:4;

(b) a protein comprising the amino acid sequence of at least 30 contiguous amino acid residues of SEQ ID NO:4; and

(c) a protein comprising the amino acid sequence of at least 50 contiguous amino acid residues of SEQ ID NO:4;

wherein said antibody or fragment thereof specifically binds to said amino acid sequence.

38. (Previously Presented) The antibody or fragment thereof of claim 37 obtained from an animal immunized with protein (a).

39. (Previously Presented) The antibody or fragment thereof of claim 37 obtained from an animal immunized with protein (b).

40. (Previously Presented) The antibody or fragment thereof of claim 37 obtained from an animal immunized with protein (c).

41. (Previously Presented) The antibody or fragment thereof of claim 37 which is a monoclonal antibody.

42. (Previously Presented) The antibody or fragment thereof of claim 37 which is selected from the group consisting of:

(a) a chimeric antibody;

(b) a polyclonal antibody;

(c) a humanized antibody;

(d) a single chain antibody; and

(e) a Fab fragment.

43. (Previously Presented) An isolated monoclonal antibody or fragment thereof that specifically binds to a protein selected from the group consisting of:

(a) a protein consisting of amino acid residues 1 to 932 of SEQ ID NO:4;

(b) a protein consisting of a portion of SEQ ID NO:4, wherein said portion comprises at least 30 contiguous amino acid residues of SEQ ID NO:4; and

(c) a protein consisting of a portion of SEQ ID NO:4, wherein said portion comprises at least 50 contiguous amino acid residues of SEQ ID NO:4.

44. (Previously Presented) The antibody or fragment thereof of claim 43 that specifically binds protein (a).

45. (Previously Presented) The antibody or fragment thereof of claim 43 that specifically binds protein (b).

46. (Previously Presented) The antibody or fragment thereof of claim 43 that specifically binds protein (c).

47. (Previously Presented) The antibody or fragment thereof of claim 44 that specifically binds protein (b).

48. (Previously Presented) The antibody or fragment thereof of claim 44 wherein said protein bound by said antibody or fragment thereof is glycosylated.

49. (Previously Presented) The antibody or fragment thereof of claim 44 which is a human antibody.

50. (Previously Presented) The antibody or fragment thereof of claim 44 which is selected from the group consisting of:

(a) a chimeric antibody;

(b) a humanized antibody;

(c) a single chain antibody; and

(d) a Fab fragment.

51. (Previously Presented) The antibody or fragment thereof of claim 44 which is labeled.

52. (Previously Presented) The antibody or fragment thereof of claim 44 wherein said antibody or fragment thereof specifically binds to said protein in a Western blot.

53. (Previously Presented) An isolated cell that produces the antibody or fragment thereof of claim 44.

54. (Previously Presented) A hybridoma that produces the antibody or fragment thereof of claim 44.

55. (Previously Presented) A method of detecting hMLH2 protein in a biological sample comprising:

(a) contacting the biological sample with the antibody or fragment thereof of claim 45; and

(b) detecting the hMLH2 protein in the biological sample.

56. (Previously Presented) An isolated antibody or fragment thereof that specifically binds an hMLH2 protein expressed in a cell or an hMLH2 protein purified from a cell culture wherein said hMLH2 protein is encoded by a polynucleotide encoding amino acids 1 to 932 of SEQ ID NO:4 operably associated with a regulatory sequence that controls the expression of said polynucleotide.

57. (Previously Presented) The antibody or fragment thereof of claim 56 which is a monoclonal antibody.

58. (Previously Presented) The antibody or fragment thereof of claim 56 which is a human antibody.

59. (Previously Presented) The antibody or fragment thereof of claim 56 which is selected from the group consisting of:

(a) a chimeric antibody;

(b) a polyclonal antibody;

(c) a humanized antibody;

(d) a single chain antibody; and

(e) a Fab fragment.

60. (Previously Presented) The antibody or fragment thereof of claim 56 wherein said antibody or fragment thereof specifically binds to said protein in a Western blot.